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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/505,459 02/11/00 OSHIBA T KOT-0008

023413
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IM22/1215

EXAMINER

DATE, J

ART UNIT

PAPER NUMBER

1753

DATE MAILED:

12/15/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.

09/505,459

Applicant(s)

OSHIBA et al

Examiner

J. DOTE

Group Art Unit

1753

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 2/11/00
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1 - 11 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1 - 11 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Applicant Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☒ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

1. The disclosure is objected to because of the following informalities:

1) The use of trademarks, e.g., TURBOMILL at page 11, line 21, have been noted in this application. Trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. The example is not exhaustive - the entire specification should be reviewed for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

2) Table 2 at page 38 reports that inventive Toner 5 has an isolation ratio for the element Cr. However, Toner 5 is not made from any compounds containing Cr. Toner 5 is made by melt mixing a binder resin with a copper phthalocyanine pigment and a charge controlling zinc salicylic acid complex. See Table 1 at page 29. What is the source of the Cr isolation ratio?

3) Table 2 at page 38 reports that inventive Toner 9 has an isolation ratio for the element Cu. However, Toner 9 is not made from any compounds containing Cu. See Table 1 at page 30. What is the source of the Cu isolation ratio?

4) Table 2 at page 38 reports that inventive Toners 10 and 11 have isolation ratios for the element Zn. However, Toners 10 and 11 are not made from any compounds containing Zn.

Toners 10 and 11 are made by melt mixing a binder resin with a quinacridone magenta pigment and a charge controlling chromium salicylic acid complex. See Table 1 at page 30. What is the source of the Zn isolation ratios?

5) Table 2 at page 38 reports that inventive Toners 12 and 13 have isolation ratios for the element Cr. However, Toners 12 and 13 are not made from any compounds containing Cr. Toners 10 and 11 are made by melt mixing a binder resin with a quinacridone magenta pigment and a charge controlling iron azo complex. See Table 1 at page 30. What is the source of the Cr isolation ratios?

Appropriate correction is required.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

In claim 7, the recitation "Mw of the resin is 2,00 to 1,000,000" lacks antecedent basis in the specification. Compare page 21, lines 10-12, of the specification, which discloses a Mw of from 2,000 to 1,000,000.

3. It is noted that the specification defines the term "isolation ratio of the element" as the "ratio (% by number) of

the number of particles containing the specified element other than the colored particle [i.e., toner particles]." See page 7, lines 11-16. The specification further defines the term as the "ratio of the number of the synchronous light emission particles to the sum of the number of the synchronous and non-synchronous light emission particles." Synchronous light emission particles are particles which emit light by both carbon atoms and the specified element observed at the same time in an emission spectrographic analysis. The non-synchronous emission particles are particles which emit light by both carbon atoms and the specified element not observed at the same time in an emission spectrographic analysis. See page 7, line 18, to page 8, line 24, of the specification.

4. In view of the teachings of the instant specification, the "element" having an isolation ratio of not more than 10% by number recited in the instant claims refers to a component that is a part of the toner particles (i.e., the colored resin particles). In other words, the "element" is a component used to form the toner particles, and is not an external additive added to the already formed toner particles, such as a fluidity agent. Inventive toners 6-8 of the specification comprise colored toner particles, which comprise a Cu phthalocyanine pigment, and an externally added titanium oxide particles. See Table 1 at

page 29. Titanium is a Group 4B element of the fourth periodic of the long periodic table, which is within the limitation of the element recited in the instant claims. However, Table 2 at page 38 of the specification reports isolated ratios for the element Cu in Toners 6-8, not for the element Ti. Thus, the "element" having an isolation ratio of not more than 10% by number recited in the instant claims refers to a component that is a part of the toner particles.

If applicants do not agree with the above interpretation, they should clearly so state and indicate where there is antecedent basis for their definition in the instant specification.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite in the phrase "element selected from elements of the Groups of 1B . . . and 4A of the fourth and fifth

periodic" (emphasis added) for improper Markush language. Proper Markush language is "R is selected from the group consisting of . . . and . . . " or "R is . . . or . . . " MPEP 2173.05(h). Applicants are using a combination of both phrases. Hence, it is not clear what is the scope of the instant claims.

Claim 4 is indefinite in the phrase "the element is copper, iron, and zinc" because it is not clear how the element can be all of the recited elements.

Claim 7 is indefinite in the phrase "Mw of the resin is 2,00 to 1,000,000" (emphasis added) because it is not clear whether applicants intended for the lower Mw limit to be 200 or 2,000.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at

the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-6, 8-10, and 11/6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 5,376,493 (Kobayashi), as further evidenced by ACS File Reg. No. 147-14-8.

Kobayashi discloses a toner comprising toner particles that comprise a binder resin and 40 parts by weight of C.I. Pigment Blue 15, which is identified as copper phthalocyanine (see ACS File Reg. No. 147-14-8). See Example 3 at col. 12. Copper phthalocyanine has a molecular weight of 576.08. The amount of copper in the toner particles is about 0.67 wt% based on the total weight of the toner particles (i.e., (40 parts by weight/660 parts by weight) \times ((63.54 atomic weight of Cu)/(576.08 molecular weight of Cu phthalocyanine)) \times 100). The amount of copper is determined from the information provided in Example 3. The amount of 0.67 wt% is within the amount of "not less than 0.1 wt%" recited in instant claim 1. The toner is used with a carrier. Col. 10, lines 45-46. Kobayashi further discloses that said toner can be used in a process comprising the steps recited in instant claim 10. See col. 11, lines 55-57; Fig. 1; and col. 10, lines 46-66.

Kobayashi does not disclose that its toner comprises copper in an isolation ratio as recited in the instant claims. The instant specification discloses that toners that comprise an element as recited in instant claim 1 in an isolation ratio as recited in the instant claims, have stable chargeability after 10,000 copies, and provide toner images without fog even after 100,000 copies. See Table 2 at page 38, and the accompanying text. Kobayashi's toner of Example 3 exhibits stable chargeability after 50,000 copies, and provides toner images free from fog after 50,000 copies. See Example 3 and Table 2 at col. 12. Since Kobayashi's toner meets the compositional limitations of the instant claims, but for the isolation ratio recited in the instant claims, and has the properties sought by applicants, it is reasonable to presume that Kobayashi's toner comprises the element copper in an isolation ratio as recited in the instant claims. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Instant claim 8 requires that the toner of claim 1 be obtained by emulsion polymerization. Thus, the toner is described in product-by-process format. Kobayashi does not exemplify a toner obtained by emulsion polymerization as recited in instant claim 8. Kobayashi's toner is obtained by the steps of: mixing in a solvent, a binder resin soluble in the solvent and particles of the colorant copper phthalocyanine that is

insoluble therein; dispersing the particles of the colorant in the binding resin to obtain a dispersed mixture; removing the solvent from the dispersed mixture to obtain a colorant-binding resin composition; mixing said composition with a binder resin and a charge controlling agent; melt-kneading the mixture; and forming toner particles from the melt-kneaded mixture. See Example 3. As discussed above, Kobayashi's toner has the properties sought by applicants, and appears to comprise the element copper in an isolation ratio as recited in the instant claims. Thus, Kobayashi's process appears to produces a toner that is the same or similar to that made by the emulsion polymerization process recited in the instant claim. The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

10. Claims 1-6, 8-10, and 11/6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 5,5,856,055 (Ugai).

Ugai discloses a developer comprising a carrier and a toner, which comprises toner particles comprising a binder resin, a colorant, azo iron complex (1), and an aluminum salicylic compound. See col. 22, lines 41-49, and Toners Q and R in Tables 2 and 3 at col. 26. Azo iron complex (1) at col. 8 has a

calculated molecular weight of 904.6. The amount of iron in the toner particles of Toners Q and R is about 0.14 wt% and 0.22 wt% based on the total weight of the toner particles. The amounts of iron are determined from the information provided in Table 3. The amounts of 0.14 wt% and 0.22 wt% are within the amount of "not less than 0.1 wt%" recited in instant claim 1. Toners Q and R are obtained by an emulsion polymerization method as recited in instant claim 8. Ugai further discloses that said toners can be used in a process comprising the steps recited in instant claim 10. See Fig. 3, and col. 20, line 50, to col. 21, line 18.

Ugai does not disclose that Toners Q and R comprise the element iron in an isolation ratio as recited in the instant claims. The instant specification discloses that toners that comprise an element as recited in instant claim 1 in an isolation ratio as recited in the instant claims, have stable chargeability after 10,000 copies, and provide toner images without fog even after 100,000 copies. See Table 2 at page 38, and the accompanying text. The specification also discloses that said toners provide stable images for many runs. Page 3, lines 2-7. Ugai's Toners Q and R exhibit stable chargeability after 50,000 copies, and provide high quality toner images after 30,000 copies. Toners Q and R also provide images having no or little fog under high temperature and high humidity conditions. See Toners Q and R in Table 4 at cols. 27 and 28, and the

accompanying text. Since Ugai's toners meet the compositional limitations of the instant claims, but for the isolation ratio recited in the instant claims; are made by a process recited in instant claim 8; and have the properties sought by applicants, it is reasonable to presume that Ugai's toners comprise the element iron in an isolation ratio as recited in the instant claims. The burden is on applicants to prove otherwise. Fitzgerald, supra.

11. Claims 7 and 11/7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ugai.

Ugai discloses a developer and a method of forming an image using said developer, as described in paragraph 10 above, which are incorporated herein by reference.

Ugai does not disclose that the styrene copolymer binder resin in Toners Q and R has the molecular weight properties as recited in instant claim 7. However, Ugai discloses that said styrene copolymer binder resin may preferably have a Mn of 1,000 to 100,000 and a Mw/Mn of from 2 to 100, which both meet the limitations recited in instant claim 7. Col. 16, lines 43-48. Based on an Mn of 1,000 to 100,000 and a Mw/Mn of from 2 to 100, the styrene copolymer binder has a Mw ranging from 2,000 to 10,000,000, which overlaps the limitation of 200 to 1,000,000 recited in instant claim 7. The Mw lower limit of 2,000 meets the limitation of 200 to 1,000,000.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Ugai, to use a styrene copolymer having a Mw/Mn ranging from 2 to 100, and a Mn and Mw that are within the limitations of instant claim 7 in Ugai's Toners Q and R and to use said toners in a process for forming toner images, because that person would have had a reasonable expectation of successfully obtaining toners that have stable chargeability under various environmental conditions, and provide high-quality toner images continually for a long period. Ugai, col. 3, lines 1-8.

12. Claims 1-6, 8-10, and 11/6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 5,645,967 (Sato).

Sato discloses an electrophotographic developer comprising a carrier and a toner that comprises toner particles comprising a binder resin, carbon black, and a charge controlling chromium salicylic complex. See Composition 30 in Table 4 at col. 19, Example 23 in Table 8 at cols. 23-24; col. 14, lines 11-14; and col. 12, lines 6-18. The chromium salicylic complex has a calculated molecular weight of 584. The amount of chromium in the toner particles is about 0.4 wt% based on the total weight of the toner particles (i.e., (2 parts by weight/100 parts by weight) \times (70/30) \times ((52 atomic weight of Cr)/(584 molecular

weight of Cr complex)) $\times 100$). The amount of chromium is determined from the information provided in Table 4; col. 14, lines 11-14; and col. 12, lines 6-14. The amount of 0.4 wt% is within the amount of "not less than 0.1 wt%" recited in instant claim 1. Sato further discloses that said toner can be used in a process comprising the steps recited in instant claim 10. See col. 1, lines 14-18; and col. 12, lines 18-29.

Sato does not disclose that its toner comprises chromium in an isolation ratio as recited in the instant claims. The instant specification discloses that toners that comprise an element as recited in instant claim 1 in an isolation ratio as recited in the instant claims, have stable chargeability after 10,000 copies, and provide toner images without fog even after 100,000 copies. See Table 2 at page 38, and the accompanying text. Sato's toner in Example 23 exhibits stable chargeability after 50,000 copies, and provides high quality toner images free from fog after 50,000 copies. See Example 23 in Table 8. Since Sato's toner meets the compositional limitations of the instant claims, but for the isolation ratio recited in the instant claims, and has the properties sought by applicants, it is reasonable to presume that Sato's toner comprises the element chromium in an isolation ratio as recited in the instant claims. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Instant claim 8 requires that the toner of claim 1 be obtained by emulsion polymerization. Thus, the toner is described in product-by-process format. Sato does not exemplify a toner obtained by emulsion polymerization as recited in instant claim 8. Sato's toner is obtained by the steps of: mixing the chromium salicylic complex with carbon black; mixing the mixture with a binder resin, a colorant, and wax; melt-kneading the mixture; and forming toner particles from the melt-kneaded mixture. Col. 14, lines 10-14, referring to col. 12, lines 6-17 and col. 12, line 60, to col. 13, line 3. As discussed above, Sato's toner has the properties sought by applicants, and appears to comprise the element chromium in an isolation ratio as recited in the instant claims. Thus, Sato's process appears to produce a toner that is the same or similar to that made by the emulsion polymerization process recited in the instant claim. The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

13. Claims 7 and 11/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato combined with US 5,037,715 (Hagiwara).

Sato discloses a developer and a method of forming an image using said developer, as described in paragraph 12 above, which are incorporated herein by reference.

Sato does not disclose that the use of a binder resin having the molecular weight properties as recited in instant claim 7. However, Sato discloses that the toner binder resin can be a polyester or a polyurethane polymer. Col. 10, line 52. Hagiwara discloses a toner urethane-modified polyester resin having a Mn, a Mw, and a Mw/Mn that meet the limitations of the instant claims. See Preparation Example Nos. 3-7. For example, the urethane-modified polyester resin of Preparation Example 3 has a Mn of 3200, a Mw of 125,000, and a Mw/Mn of 39. Hagiwara discloses that toners, which comprise said urethane-modified polyester binder resins, have good anti-blocking, fixing, and storage properties. Said toners also provide good images free of fog. Col. 1, line 61, to col. 2, line 16; and Examples 3-7 in Table 4 at cols 9 and 10.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Hagiwara, to use a Hagiwara's urethane-modified polyester resin having a Mn, Mw, and Mw/Mn that meet the limitations of instant claim 7 as the toner binder resin in Sato's toner of Example 23 and to use said toner in a process for forming toner images, because that person would have had a reasonable expectation of successfully obtaining a

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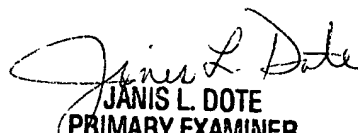
toner having the benefits disclosed by Hagiwara, and providing good toner images without fog.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (703) 308-3625.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nam Nguyen, can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599 for after final faxes, and (703) 305-7718 for other official faxes.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JLD
December 13, 2000


JANIS L. DOTE
PRIMARY EXAMINER
GROUP 1500
1700